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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/565,521	05/08/2007	Robert A. Grigsby Jr	81.636	2944

7590 06/18/2009  
Legal Department  
Huntsman Corporation  
10003 Woodloch Forest Drive  
The Woodlands, TX 77380

EXAMINER
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EASHOO, MARK

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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06/18/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/565,521	GRIGSBY JR ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Melissa A. Winkler	1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 February 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/09</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

Applicant's response of February 12, 2009 has been fully considered. No amendments to the claims have been made.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milliren et al. (US 5,405,886) in view of Ito et al. (JP 02250884).

Regarding claims 1, 2, and 4, Milliren et al. teaches a process of preparing a polyurethane foam in which a polyol and toluene diisocyanate are reacted in the presence of a catalyst, such as pentamethyldiethylenetriamine, and a quaternary ammonium salt. The catalyst is present in an

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amount of 0.005 to 1.5% by weight based upon the amount of polyol while the quaternary ammonium salt is present in an amount of 0.05 to 2.0% (Col. 2, line 24 to Col. 3, line 29; Col. 5, lines 7-48).

Milliren et al. does not teach that the quaternary ammonium salt is specifically contains tris-(hydroxyethyl) methylammonium cation. However, Ito et al. teach a process of making a polyurethane foam using tris-(hydroxyethyl) methylammonium as the cation portion of the quaternary ammonium salt (Abstract). Milliren et al. and Ito et al. are analogous art because they are from the same field of endeavor, namely that of processes for making polyurethane foams. At the time of the invention, a person of ordinary skill in the art would have found it obvious to use the tris-(hydroxyethyl) methylammonium as the cation of the quaternary salt, as taught by Ito et al., in the process, as taught by Milliren et al., and would have been motivated to do so in order to obtain a high-purity product having an open-cell structure and to control the water content in the reaction system (Abstract).

Regarding claims 3 and 6, Milliren et al. teaches the process of claim 1 wherein water is used as a blowing agent in an amount of 1.5 to 7 parts based on 100 parts polyol (Col. 2, lines 46-48).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Milliren et al. (US 5,405,886) in view of Ito et al. (JP 02250884) as applied to claim 1 above, and further in view of Inazawa et al. (US 5,872,156).

Milliren et al. and Ito et al. teach the process of claim 1. Milliren et al. does not teach that potassium ions are present in the reaction mixture. However, Inazawa et al. teaches a

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polyurethane foam prepared from a tertiary amine catalyst and a metallic catalyst such as potassium octylate (Col. 4, line 6 to Col. 5, line 27). In Example 5, the amount of potassium ions provided by the potassium octylate catalyst solution represents roughly 0.2% by weight of the total polyurethane foam-forming mixture (Table 1 and Col. 9, lines 1-19). Milliren et al. and Inazawa et al. are analogous art because they are from the same field of endeavor, namely that of polyurethane foams. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use a metallic catalyst such as potassium octylate, as taught by Inazawa et al., in conjunction with the tertiary amine catalyst in the invention taught by Milliren et al., and would have been motivated to do so because replacing at least some of the conventional tertiary amine catalyst with the metallic catalysts taught by Inazawa et al. would provide for a lower-fuming polyurethane foam (Inazawa et al., Col. 10, lines 1-6).

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milliren et al. (US 5,405,886) in view of Ito et al. (JP 02250884).

Milliren et al. teaches a reaction mixture comprising water, a catalyst such as pentamethyldiethylenetriamine, and a quaternary ammonium salt (Col. 2, line 24 to col. 3, line 29; Col. 5, lines 7-48; Col. 6, lines 64-65).

Milliren et al. does not teach that the quaternary ammonium salt is specifically contains tris-(hydroxyethyl) methylammonium cation. However, Ito et al. teach a process of making a polyurethane foam using tris-(hydroxyethyl) methylammonium as the cation portion of the quaternary ammonium salt (Abstract). Milliren et al. and Ito et al. are analogous art because they are from the same field of endeavor, namely that of processes for making polyurethane foams.

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At the time of the invention, a person of ordinary skill in the art would have found it obvious to use the tris-(hydroxyethyl) methylammonium as the cation of the quaternary salt, as taught by Ito et al., in the process, as taught by Milliren et al., and would have been motivated to do so in order to obtain a high-purity product having an open-cell structure and to control the water content in the reaction system (Abstract).

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Milliren et al. (US 5,405,886) in view of Ito et al. (JP 02250884).

Milliren et al. teaches a reaction mixture comprising a blowing agent such as acetone and a quaternary ammonium salt (Col. 2, line 24 to Col. 3, line 29; Col. 4, lines 49-68).

Milliren et al. does not teach that the quaternary ammonium salt is specifically contains tris-(hydroxyethyl) methylammonium cation. However, Ito et al. teach a process of making a polyurethane foam using tris-(hydroxyethyl) methylammonium as the cation portion of the quaternary ammonium salt (Abstract). Milliren et al. and Ito et al. are analogous art because they are from the same field of endeavor, namely that of processes for making polyurethane foams. At the time of the invention, a person of ordinary skill in the art would have found it obvious to use the tris-(hydroxyethyl) methylammonium as the cation of the quaternary salt, as taught by Ito et al., in the process, as taught by Milliren et al., and would have been motivated to do so in order to obtain a high-purity product having an open-cell structure and to control the water content in the reaction system (Abstract).

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### ***Response to Arguments***

Applicant's arguments, see page 2, filed February 12, 2009, with respect to the rejection(s) of claim(s) 1-4 and 6-9 under U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made under 35 U.S.C. 103(a) over Milliren et al. (US 5,405,886) in view of Ito et al. (JP 02250884).

### ***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELISSA WINKLER whose telephone number is (571)270-3305. The examiner can normally be reached on Monday - Friday 7:30AM - 5PM E.S.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571)272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/  
Supervisory Patent Examiner, Art Unit 1796

AS